

# GEOGRAPHIC NEWS BULLETINS

*Published Weekly by*

## THE NATIONAL GEOGRAPHIC SOCIETY

(The National Geographic Society is a scientific and educational Society, wholly altruistic, incorporated as a non-commercial institution for the increase of geographic knowledge and its popular diffusion. General Headquarters, Washington, D. C.)

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Contents for Week of October 23, 1939. Vol. XVIII. No. 16.

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  5. Bahrein Islands, with Desert Riches More Precious Than Pearls
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*Photograph by Edwin L. Wisherd*

### TRINIDAD'S ASPHALT LAKE HELPS SMOOTH BRITISH ROADS

In 1498 Columbus discovered for Spain a small island off the coast of South America where a strong smell of sulphur led sailors to a strange plain of glassy black rock—a solid lake of asphalt. Stopping to waterproof his ship with the melted substance, Sir Walter Raleigh a century later broke the Spanish hold on the island and gave Trinidad eventually to England. Now a railroad on the asphalt lake speeds up collection of the "black rock," which is the greatest source of petroleum under the British flag. Mysterious currents in the non-liquid lake bring to the surface a tree stump engulfed thousands of years ago, and residents of the island walk to inspect it across the "solid oil." Trinidad is one of England's most valuable possessions in the Americas (Bulletin No. 2).

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### HOW TEACHERS MAY OBTAIN THE BULLETINS

The Geographic News Bulletins are published weekly throughout the school year (thirty issues) and will be mailed to teachers in the United States and its possessions for one year upon receipt of 25 cents (stamps or money order); in Canada, 50 cents. Entered as second-class matter, Jan. 27, 1922, Post Office, Washington, D. C., under act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in section 1103, Act of Oct. 3, 1917, authorized Feb. 9, 1922. Copyright, 1939, by National Geographic Society, Washington, D. C. International copyright secured. All rights reserved. Quedan reservados todos los derechos.

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*Photograph by Edwin L. Wisherd*

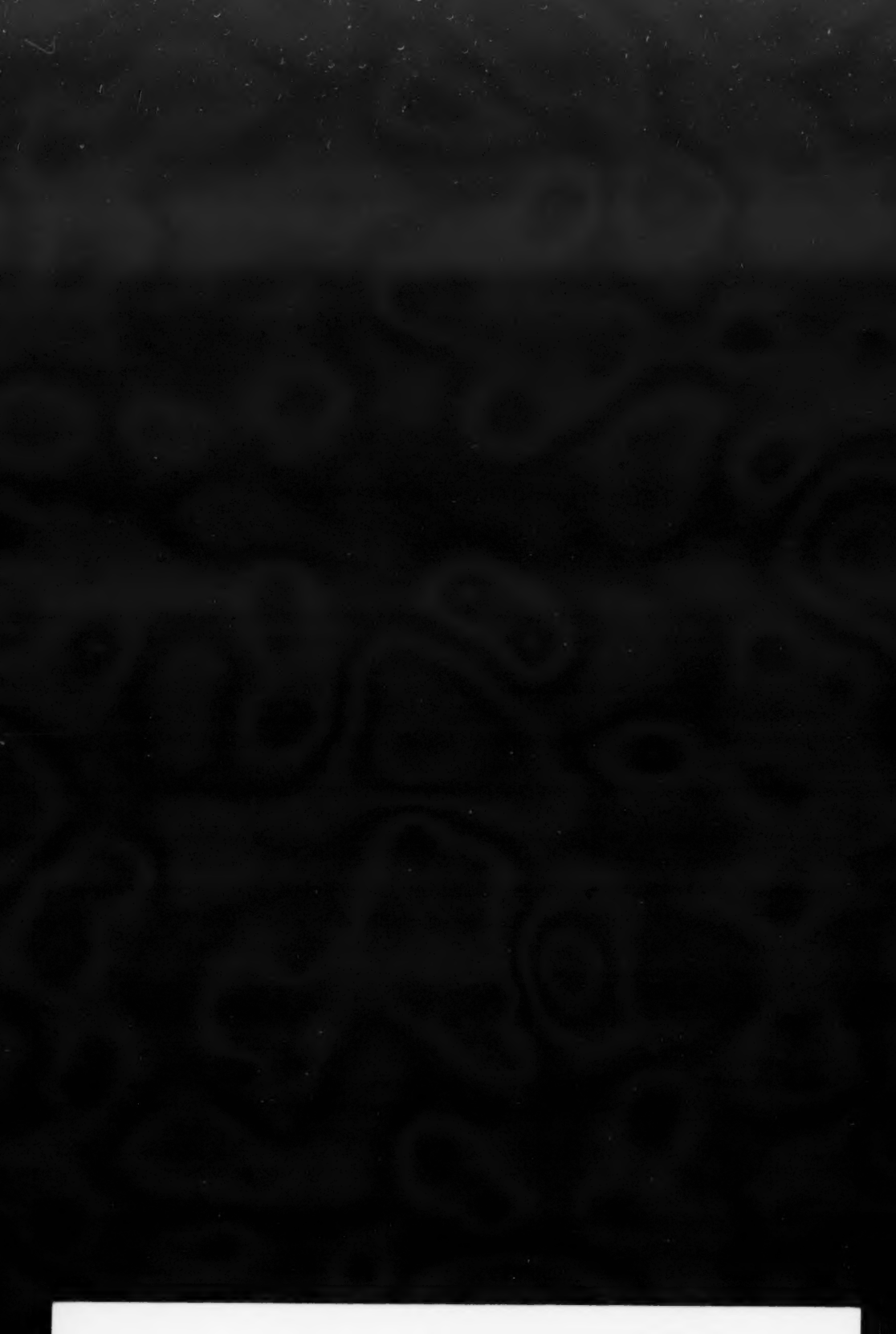
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### Courted Turkey Holds a Key

**E**NVOYS from Ankara conferred with two different European governments at the same time this month. Turkish diplomatic missions had conversations simultaneously in Moscow and London. The importance of Turkey as an ally, acknowledged at opposite ends of Europe, lies in its key geographic position as the bridge between Europe and Asia.

For the one-time land of the fez and veil, only three per cent in Europe, has emerged from its harem seclusion as the country of vital European transport routes. Turkey can either give or deny to foreign countries the use of Europe's chief land trail to Asia, the east-west path of Xerxes and Alexander the Great, and the Berlin-to-Baghdad railway dream. She can open or close at will one of the most important north-south water routes of the continent's traffic—the only waterway between the Black Sea and the Mediterranean, which squeezes through the narrow Straits of the Bosphorus and the Dardanelles. Moreover, Turkey today is a land more than three times as large as Great Britain, with an exportable surplus of coal, cotton, wool, opium, minerals, and food.

#### Straits Commerce a Golden Fleece for Modern Jasons

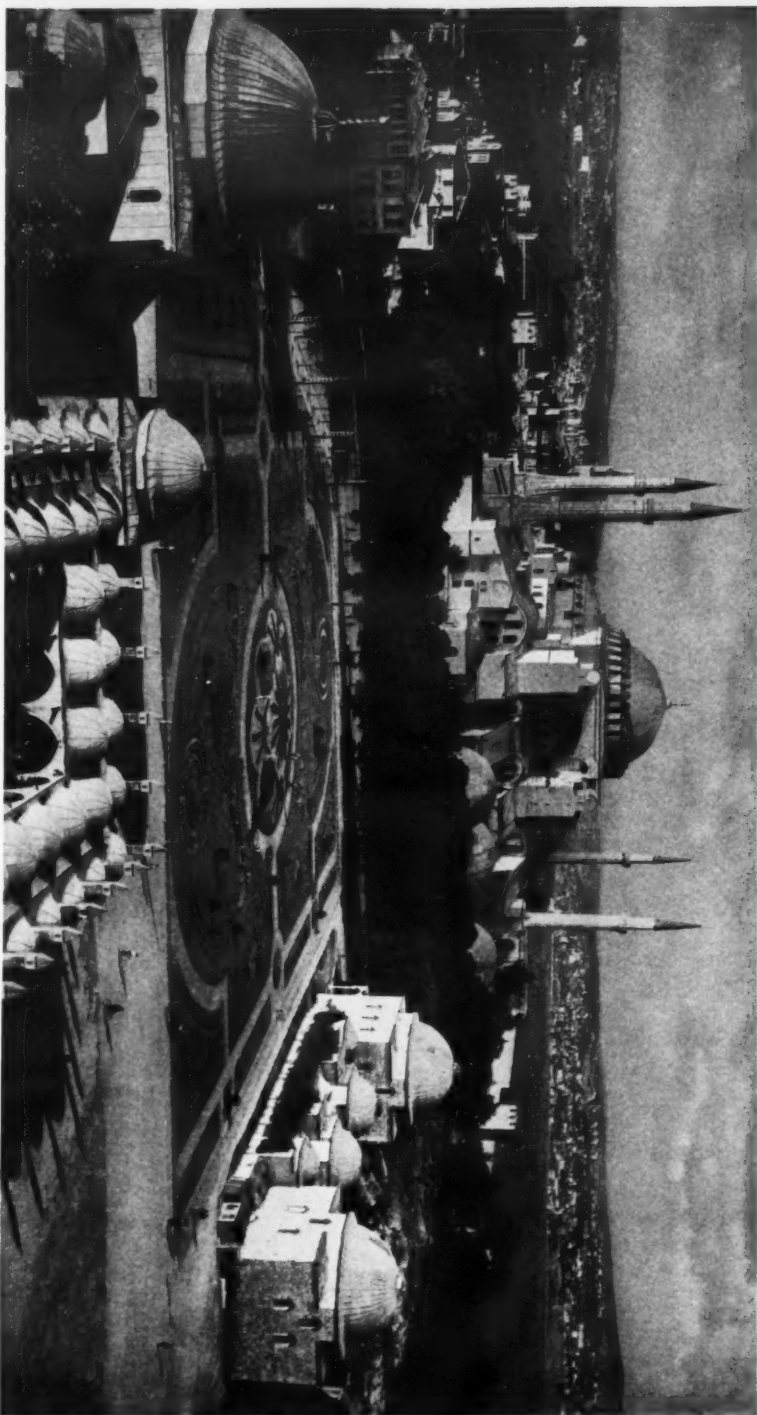
The natural sluice at which Turkey guards the gate for traffic between the busy Mediterranean and Black Seas consists of the Strait of the Dardanelles on the southwest, the Sea of Marmara in between, and the Strait of the Bosphorus on the northeast. These three are joined in a strategic waterway 172 miles long, a third of which is less than four miles wide and consequently at the mercy of forts along the closely parallel banks. Twice during the World War the Straits turned back Allied fleets, and a subsequent attempt to attack the Turkish waterway by land resulted in the Allied retreat from Gallipoli after a futile nine-month siege. It was not until 1920 that the Allies reached Istanbul inside the Straits.

Black Sea ports of four countries send their commerce into world shipping channels through the narrow bottleneck of Turkey's Straits. Rumania and Bulgaria have no other ports except those threaded on the Straits' shipping routes. Rumania's traffic through Turkey's waterway is as important for shipping out Rumanian oil as for bringing in possible military aid from western European allies. The same waterway controls access to Soviet Russia's Black Sea grain ports and the mineral resources of the coastal regions—coal, iron, and oil. All the world-wide trade with Istanbul sails through the narrows of Turkey's Straits. The commerce through this watery defile has realized dreams of the Golden Fleece for which mythical Jason and his Argonauts made one of the first storied transits.

#### Link in German Dream of Two-Continent Railroad

Turkey's naval base in the Bay of Izmit makes the lakelike Sea of Marmara a fortified vestibule at the entrance of the Black Sea. The difficulty of passing fortifications in this waterway gave Constantinople the name of the Unconquerable.

At the narrow land link squeezed between the Aegean and Black Seas, Europe and Asia touch fingertips. Over this geographic bridge the two continents have poured their commerce for thirty centuries—the spices of Araby, the jewels of Ind, the silks of old Cathay. Where the land link is broken by the Bosphorus, Istanbul stands as erstwhile mistress of the trade routes. The German dream of rails reaching from Berlin to Baghdad mapped a track across this historic stretch,



*Photograph by Bernard F. Rogers, Jr.*

#### ON THE BRINK OF ASIA STANDS ONE OF EUROPE'S OUTSTANDING ARCHITECTURAL ACHIEVEMENTS

For 1400 years Sancta Sophia has stood in this precarious position, and the strength of Istanbul (Constantinople) has protected the venerable old church from most of Asia's invasions of Europe. The Bosporus, famous crack between continents, is visible beyond. The boldly massive dome, supported by a hundred columns reinforced with bronze bands, was a triumph of 6th century builders by which Emperor Justinian hoped to surpass the fame of Solomon. Within a week after Turkish capture of the city, Sancta Sophia's pictures of the Virgin had been whitewashed, and the pride of Byzantium had become the treasure of Islam. Tombs of Sultans and their children surround Sancta Sophia with a mushroom growth of little domes (Bulletin No. 1).



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### European Colonies Make Non-American Spots in the Americas

THE "safety zone" of neutral waters around the Americas has belligerent holes in it. When the Panama conference of 21 American republics outlined a broad band of protection around the two continents, exceptions were made for the colonies and dominions of foreign countries. The exceptions cut deep notches of non-neutral waters into the coastlines of North, Central, and South America, with additional holes surrounding foreign possessions among the Caribbean Islands.

These European patches of the Americas bring Europe's war threats as close to the United States as the Bahamas, less than 50 miles off the coast of Florida, or Bermuda, five hours from New York by air, or Jamaica, 600 miles northeast of the Panama Canal. France, as represented by Clipperton Island, lies in the Pacific due south of New Mexico (about 1,500 miles away), and in the Caribbean (Martinique, Guadeloupe, and smaller isles) approximately 1,000 miles east of the Panama Canal. The Netherlands, mobilized although neutral, has an island group some 700 miles east of Panama, and less than twice as far from Miami.

#### 94 Per Cent of Land Is British

In all, Great Britain, France, and The Netherlands have almost 14 million subjects in the New World where their colonies and dominions aggregate more than four million square miles in area.

Great Britain, thanks mainly to Canada—her largest dominion—controls 94 per cent of this land and 98 per cent of the people. Her New World holdings constitute 30 per cent of the entire British Empire.

In the South Atlantic in 1914 British and German fleets fought the battle of Falkland Islands off the coast of Argentina, for control of the group of 100 bleak little sheep-pasture islands which Great Britain had occupied as recently as 1833. Bermuda in the North Atlantic is headquarters for the America and West Indies squadron of the British Navy.

Most of the European footholds in the Western Hemisphere are remnants of large empires held early in the colonizing era. French Guiana and its associated inland territory of Inini in the northern portion of South America are the oldest members of the French colonial family, having been occupied in 1626. Barbados in the Caribbean Sea has been British since 1627. Netherlanders took their section of Guiana in 1667.

#### Mineral and Food Supplies from Colonies Important

Among the supplies from these New World holdings to ease Europe's needs are wheat and meat from Canada. St. Pierre and Miquelon, rocky French islands at the mouth of the Gulf of St. Lawrence, send codfish to France. Caribbean islands belonging to all three nationalities contribute sugar, rum, coffee, cocoa, and fruits.

Great Britain can draw on American colonies for an unusual variety of supplies. Whale oil as well as wool is available from the Falkland Islands. The Windward and Leeward Islands of the Caribbean are miniature sugar bowls and coffee pots, with such specialties as the Sea Island cotton and arrowroot from St. Vincent, bay rum and limes from St. Lucia, nutmegs and mace from Grenada, sponges and sisal from the Bahamas. Jamaica, in addition to its famous ginger, contributes coffee.

Bulletin No. 2, October 23, 1939 (over).

with a link to Smyrna as well, and plans were being translated into steel by the 1890's. Today's gap in the steel highway is filled by a bus route across the desert in Iraq.

The Turkey of Ottoman splendor gave Europe tulips and carpets, baths and silks and fountains. The Turkey of today ships Smyrna figs and hazelnuts, olive oil and tobacco, cotton and wool, opium and coal. Other mineral resources available in the country are chrome, manganese, mercury, sulphur, and zinc—all of which would make Turkey a valuable ally in a protracted mechanized war.

Turkey still has remnants of the prestige she once enjoyed among the Moslems of the world as seat of the Ottoman imperial family, rulers of the farflung Ottoman Empire, caliphs of Islam. From Constantinople (illustration, inside cover) they spread their power and religion over parts of three continents, from India to Hungary, around the Mediterranean from Palestine to Spain. The Turkish caliphate was not abolished until 1924. Great Britain, France, and Italy have fiery Moslem colonials in their empire families; and Moslem prejudices are handled like sparks among the gunpowder politics of colonies today.

Note: For additional photographs and descriptions of Turkey see "The Transformation of Turkey," *National Geographic Magazine*, January, 1939; "Looking In on the Everyday Life of New Turkey," April, 1932; "Summer Holidays on the Bosphorus," October, 1929; "Turkey Goes to School," January, 1929; "Seeing 3,000 Years of History in Four Hours," December, 1928; and "Skirting the Shores of Sunrise," December, 1926.

Bulletin No. 1, October 23, 1939.



© Kurt and Margot Lubinski

#### NEW TURKEY GIVES THE NEW GENERATION A HEAD START

When modern Turkey uprooted learning from the Koran and established it on a non-religious basis, as in western countries, the time-honored Arabic script of the Koran was supplanted by Latin letters. School children, who had merely to learn the new way of writing, had an advantage over their elders, who had also to forget the old way while learning the new A. B. C.'s.

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### Cement: A Lucky Accident That Revolutionized Architecture

**I**T WAS 115 years ago that a British bricklayer in search of mortar discovered cement. Since then, a multi-million-dollar cement and concrete building industry has risen on the foundation of this material which before mixing looks like dust, then pours like soup, and finally stands like stone. Pouring it into wooden molds, builders have obtained a synthetic stone with a slightly rough surface "grain" inherited from the wood grain of the molds.

Now the building world has learned that a new smooth and sturdy lacquer has been developed for painting the molds; from these the hardened cement emerges with the grained roughness reduced to a vanishing point. With the prospect of a marble-smooth surface, the "liquid stone" which cement makes can be used for walls and other building without additional surfacing of stone or brick.

#### Bricklayer Discovered "Portland Cement"

This is one of the great advances in the use of cement since 1824, when England granted a patent for "portland cement" to Joseph Aspdin, a bricklayer of Leeds. Aspdin had built a bottle-shaped kiln at Wakefield, ten miles from Leeds, where he fired a mixture of finely ground limestone and clay. The cement was named from its resemblance to the building stone of the Isle of Portland, a rocky limestone peninsula on the southern coast of England. This early cement was used in building the Thames tunnel, in 1828.

Cement is used solely as a binding material, just as mortar is used as a bond in laying brick. In concrete, the cement binds the particles of gravel and sand together. It was while trying to develop a bond for masonry stronger than lime mortar that Aspdin hit upon the combination of minerals making cement.

Today, the limestone is crushed by large gyratory or roll crushers, mixed with the other raw materials, and then pulverized. This mixture is put into cylindrical kilns and roasted at a temperature of 2,400 to 2,800 degrees Fahrenheit.

The intense heat combines the various ingredients into cement clinkers. The clinkers, mixed with heavy steel oval-shaped globules, are dumped into rotary grinders where the tumbling of the steel "eggs" pulverizes them into portland cement. The cement is then tested for fineness, setting, soundness, strength, and chemical content.

#### American Industry Less Than 70 Years Old

The first cement mill in the United States was built in 1872, in Pennsylvania. By 1890 there were 16 cement plants which produced 335,500 barrels of cement. This was still inadequate to meet domestic demand, and nearly two million barrels were imported that year.

In 1936, not 50 years later, there were 163 plants in the United States, which produced 112,396,000 barrels. The 1938 output dropped to 105,500,000 barrels. Imports to supplement this production bring another million or two barrels to American builders.

Today, Pennsylvania is the greatest cement-producing State, accounting for more than one-fifth of the country's output, and shipping about three-fourths of this to other States.

California is the State ranking second in production. Cement is produced in



The small island of Trinidad fills a large need; its unique pitch lake is a source of asphalt and petroleum (illustration, cover). Most of England's oil, however, comes from sources outside the Empire.

### Colonial Minerals Give Fighting Power and Buying Power

Of special importance during a war crisis are Canada's resources of nickel and copper, lead and zinc. Bauxite, ore for aluminum, is one of the leading exports with which Surinam (Netherlands Guiana) supplies the Netherlands. Gold from the French and Netherlands Guianas and from Canada can be transformed into credit for purchases in the United States for all three mother countries in Europe.

Except for Great Britain, France, and The Netherlands, the only European country still holding land in the Western Hemisphere is Denmark. The Danish colony of Greenland, 95 per cent ice-covered, lies 1,000 miles north of Newfoundland.

Note: See also "Southward Ho! in the 'Alice,'" *National Geographic Magazine*, March, 1938; "Crossroads of the Caribbean," September, 1937; "Hunting Useful Plants in the Caribbean," December, 1934; "Flying Around the North Atlantic" (Greenland), September, 1934; "A Modern Saga of the Seas," December, 1931; "Skypaths Through Latin America," January, 1931; "To Bogotá and Back by Air," May, 1928; and "How Latin America Looks from the Air," October, 1927; also "Canada from the Air," October, 1926.

Bulletin No. 2, October 23, 1939.



Photograph by Edwin L. Wisher

### TO THE EMPIRE MARTINIQUE GAVE AN EMPRESS; TO THE REPUBLIC, RUM AND SUGAR

The French Caribbean islands, of which Martinique and Guadeloupe are the largest, serve the motherland an assortment of tropical foods—sugar and rum, coffee and cocoa, vanilla, pineapples and bananas. In Fort-de-France, Martinique's chief town, a statue in high-waisted Empire style commemorates the colony's most distinguished export—the soldier's daughter who became Napoleon's Josephine. Above Josephine's palm-shaded park rises the hill of the new Colonial Hospital. A less beneficent hill partially depopulated the island in 1902, when volcanic Mont Pelée buried an entire city under an eruption of lava and ash.

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### Three East Baltic Nations under Soviet Union's Wing

**E**STONIA," "Latvia," "Lithuania" was the order of the Baltic roll call from the Kremlin, and ministers from the three small countries in rapid succession answered "Here." When the ministers departed from Moscow, their briefcases bulged with mutual assistance pacts and "assignments" of individual concessions for each country to make to the Soviet Union. The mutual assistance pacts provide for a Russian army to go to their aid in case an enemy crosses their borders headed in the direction of the Soviet Union.

Lithuania, Latvia, and Estonia together form an ages-old channel for the movement of history, with German and Russian whirlpools at opposite ends of the channel. The three little Baltic States have no natural barrier, such as a swamp or mountain range, to protect them from the Soviet Union on the north and east or from the German Reich on the southwest—nothing to keep the big countries from clashing over the heads of the little ones. Yet, without the help of mountains as in Switzerland or island detachment as in Ireland, they have preserved their traditions through centuries of foreign influence.

### Gave United States One Per Cent of Its International Mosaic

The three countries are pyramided like a child's building blocks on the east shores of the Baltic—Lithuania as the base, Latvia above, and little Estonia balanced on top. Lithuania until last year was the largest, but boundary revisions in favor of Poland and Germany have left Lithuania now second in size to Latvia, although it still has the largest population.

All together not as large as the State of Missouri, the three countries are divisions of the same expanse of relatively flat Baltic coast land, scoured smooth by the Ice Age glacier action. They have been a convenient battle plain for other peoples' fights—a Belgium of the Baltic—since the Teutonic Knights of the Middle Ages started Germany's eastward expansion, and especially in Napoleon's campaign against Russia and during the World War. All three proclaimed their independence from Russia as an aftermath of the World War.

The defenselessness of these young Baltic triplets has been pointed out as a reason for the great number of their nationals migrating to the United States. They contributed more than one per cent of the U. S. white population of foreign origin—a little more than France, for instance. These Baltic-Americans, numbering approximately a half-million, have come from homelands with only one-eighth the population of France, and a population pressure per square mile only half as great. The largest fraction of public debt in each country is owed to the United States.

### The "Little Butter-and-Egg" Countries of the Baltic

With almost everything in common that a uniform geography can confer, the three Baltic States have had variety thrust upon them by history. The Lithuanians are European, speaking an ancient Aryan tongue. Estonia is inhabited by a people whose origin is probably similar to that of the Finns to the north—Asiatic. While years of Russian domination in Lithuania has made the people Catholic, a Swedish influence has made Latvia predominantly Lutheran.

A long history of armies marching up and down their land, pushing boundaries before them, has left the Baltic's eastern threesome with minority problems somewhat similar to those of the late Czecho-Slovakia. All three have large percentages

33 other States, where the location of mills is largely determined by proximity to limestone quarries.

The most extensive use of portland cement in the United States today is in building construction, which consumes about 24 per cent of domestic production. Highways and street paving consume about 23 per cent. Dams and waterfront developments take 14 per cent; residences, 10 per cent.

### **United States Heads World in Cement Output**

Some of the most spectacular figures in the annals of cement construction are those connected with dam building in the United States. To visualize the volume of cement used in such a project, the Shasta Dam in California furnishes a good example. The sacks of cement recently purchased by Uncle Sam for this project, if laid end to end, would extend more than one-third the way around the world at the Equator—8,540 miles, greater than the distance from London to Singapore. This same amount of cement would construct a twenty-foot highway from New York to Los Angeles, 2,400 miles.

In the past thirty years the Government has built more than fifty-five dams ranging in height from 24 feet to 727 feet, to serve for irrigation, power, and flood control.

The amount of cement used in these vast projects is one reason for the fact that the United States is now the largest producer and consumer of portland cement in the world. The American output is twice as large as that of any other nation. Other great cement producers are Germany, Great Britain, Japan, and the Soviet Union.

**Bulletin No. 3, October 23, 1939.**



*Photograph by W. Robert Moore*

### **CEMENT IN SYRIA LEADS STILL WATERS INTO GREEN PASTURES**

Among the recent French developments in the mandate of Syria is the building of irrigation canals to reclaim more land for grazing and farming, which are the principal occupations of the Syrians. This canal taps a large lake near Homs to water the surrounding plain. Women and men alike carry vessels of mixed concrete on their heads to line the new ditch. A one-man load has just been dumped within the wooden framework (lower center). Just as the human heads are protected from the Syrian sun, the freshly-laid cement is "cured" under cover for several days, to permit the slow formation of minute crystals with which cement binds the sand and gravel of concrete together.

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### Bahrein Islands, with Desert Riches More Precious Than Pearls

**A** BRIDGE over waters where the Phoenicians sailed, where slaves groped for pearls to flatter the Queen of Sheba or make the fabulous ankle-length necklace of Ishtar of Babylon! The two largest of the Bahrein Islands, simmering in the hot Persian Gulf between Arabia and Iran, are being connected by a stone causeway and a bridge, to speed traffic over the two miles of shallow water between Bahrein and Muharraq without benefit of boatman.

Bridges for the sea-going Arabs of the Bahrein Islands have hitherto been superfluous. They set the three-cornered sails of their slim home-made boats and sail out of the Persian Gulf to Africa. They sail several miles from shore to dip up drinking water gushing forth from submarine springs, one of the most unusual features of the Bahrein Islands. Divers with the pearl fleet stay offshore above the rich pearl banks of the Gulf as many days or weeks as provisions last, with intervals of gouging oysters from dark beds twenty feet under water.

#### Oil Flows More Freely Than Water

New needs accompanied new developments on the Bahrein Islands with the dawn of the Oil Age. The island group consists of five flat chunks of desert, almost as barren as the surface of the moon, and a spattering of unnamed rocky islets, off Arabia's coast. In 1932, prospectors struck oil on the largest, Bahrein, and the waterless desert bubbled over with petroleum.

Now an air-conditioned city stands on Bahrein, linked to refinery and oil wells by black asphalt motor roads crossing the sands. On the next largest island, Muharraq to the north, is the airport for planes between Europe and the Orient.

The city of air-cooled cottages, theater, and club has both golf links and cricket field spread like green scarves on the desert. Both British and American interests share the island, because of the British air and naval base and the American oil company. Officially the Bahrein Islands are under the government of their sheik.

#### Black Pearls, Creamy "Mermaids' Tears" Fought Over for Centuries

Another change which the Oil Era has brought to Bahrein is water. Formerly, if local springs dried up, the Arabs would "drink mud"; the only alternative was the strange uprush of sweet water through the salt from submarine springs at some distance from the shore. For experienced pearl divers, it was still not easy to collect the fresh water in skins without a salty mixture. Oil well drilling technique gave Bahrein artesian wells for adequate water supply, even for irrigation.

In spite of the need to go to sea and fish for drinking water, men were living on the Bahrein Islands before history began. There is evidence that the Phoenicians started out from there, extending their great maritime business system to the Mediterranean and beyond. A new chapter in the record of mankind, perhaps earlier than any yet written, is hinted by the unexplained burial grounds extending for miles on Bahrein Island. Long mounds up to forty feet high have proved to be two-story stone tombs with several rooms, their entrances facing west. From scraps of black-etched pottery, amulet gold, and carved ivory archeologists have pronounced them Phoenician.

In more than a hundred village oases around the prehistoric tombs, Bahrein Islanders cultivate the desert-dweller's invaluable date palm, and breed sturdy little white donkeys to trot beside their camels. Reed mats and date sticks build their houses. Their date diet is eked out with fish from the coast and gazelles hunted on

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of Russians (3 per cent in Lithuania, 9 per cent in Estonia) and smaller groups of Germans (1 per cent in Lithuania, 2 per cent in Estonia). Latvia has the largest national minorities; only three-fourths of the people are Letts, while 12 per cent are Russian and 3 per cent German. Lithuania has in addition a Polish element, as Estonia has a small Swedish factor. All three countries have provisions for educating each minority in its own language.

Trade tides of these three Baltic States have a decided undertow in the direction of Germany and England. Hitherto the Soviet Union has not had a larger share of a year's business than 8 per cent.

Limited in mineral resources, except for Estonia's oil shales and Lithuania's amber, the east Baltic threesome of young states has built an international business on forestry and foodstuffs. The most valuable single export from both Lithuania and Estonia is butter, which ranks second for Latvia. Eggs and meat are big side dishes for the foreign trade. Latvia's principal item of international commerce is wood. All three to some extent export timber, newsprint, cellulose, plywood and products of their extensive forests. Another commodity common to the three countries is flax.

Note: Additional information regarding Russia's "sphere of influence" in the Baltic is contained in "Looking Down on Europe Again," *National Geographic Magazine*, June, 1939; "Flying Around the Baltic," June, 1938; and "Latvia, Home of the Letts," October, 1924.

See also in the *GEOGRAPHIC NEWS BULLETINS*: "Latvia Carries on 'Business as Usual' Despite European Tension," December 12, 1938; "Ancient Lithuania Smolders about Modern Boundaries," April 4, 1938; and "Democracy Returns to Estonia," October 25, 1937.

**Bulletin No. 4, October 23, 1939.**



*Photograph by Gustav Heurlin*

#### **ESTONIAN FOLK SONGS LET FREEDOM RING**

Before its independence in 1918, Estonia had been subject to Russia since Peter the Great extended his empire. Even when use of the Russian language was required in the little coastal country, Estonians kept their own speech alive in the numerous folk songs handed down unwritten for generations. The songs of Estonia are similar to those of Finland, particularly the *Kalevala* which the Finnish composer Sibelius has made familiar to the non-Finnish world. Estonian speech also is similar to Finnish, for the people on opposite sides of the Gulf of Finland are related. The annual song festival in Tallinn brings out Estonian native costumes, the striped shirts and figured headbands of which are as bright as the flags massed in the rear.



camel-back through the desert. Metropolis of the islands is the town of Manama at Bahrein's northern tip, the port to which merchants have come since King Solomon's day to bargain for pearls.

The old and far-fabled pearl-fishing of the Persian Gulf, one of the richest in the world's history, centers around Bahrein. From June to November the islanders and Arabs from the mainland dot the shallow waters of the pearl banks with hundreds of small boats, diving feverishly for oysters which contain "mermaid's tears," as a local legend calls pearls. Most of them are lustrously creamy, rarely white, occasionally steel-gray or smoky, sometimes black. The diver goes overboard among dangers of shark bite and ray sting with protection against water only: beeswax in his ears and a clip like a clothespin to close his nostrils. A weight on his feet helps him down and a rope around his waist helps him up, so that most of his hectic underwater sixty or ninety seconds can be spent tearing oysters from the bottom and stowing them into his small basket. The captain of a boat sells the whole crew's catch and divides the rupees equally among them.

The Portuguese empire that once reached from Brazil to China included the Bahrein Islands by 1520. By 1622 Persians ruled them again, only to be ousted by pearl-hungry Arabs from the mainland in 1783. Shahs of Iran and Sultans of Arabia's border states treasure heavy, symmetrical Bahrein pearls handed down as priceless heritage for generations.

Note: Photographs of and brief references to the Bahrein Island region will be found in "Old and New in Persia," *National Geographic Magazine*, September, 1939; "Flights from Arctic to Equator," April, 1932; "By Seaplane to Six Continents," September, 1928; "Seeing the World from the Air," March, 1928; "The Rise of the New Arab Nation," November, 1919.

Bulletin No. 5, October 23, 1939.



Photograph by Henri de Monfried

#### THEIR SKILL KEPT THE PERSIAN GULF ASTIR WITH PIRACY, SLAVERY, AND SMUGGLING

The Bahrein Islands outlawed slavery nearly 20 years before the United States did. Adept smugglers, however, still traffic in slaves kidnapped in Africa, chained in the bottom of a speedy "zarug" under the concealing slats, and rushed over-night to some uninhabited cove on the Persian Gulf. The British sent an expedition to catch pirates on the Persian Gulf, after the Bahrein chief recommended piracy as a get-rich-quick profession. When the pearl-fishing season is over, in October or November, among the occupations to which idle Bahrein Islanders turn their hands are boat-building and the making of sailcloth. The island's oil moves ships and motors elsewhere in the world, but most of the local vessels are still powered by the wind.



